



LOCATION: T55-R39E <sup>W</sup> 3 C NW NE	TIME OPEN: 60 MINUTES	FILE NUMBER: 0977-02-01
COUNTY AND STATE: KANSAS, CHEYENNE	INITIAL SHUT-IN TIME: <input type="checkbox"/>	I. D. NUMBER: W 9204 K
COMPANY: FARMER AND MUSGROVE	FINAL SHUT-IN TIME: 20 MINUTES	DATE COMPUTED: 1/18/60
LEASE AND WELL NUMBER: NEITZEL 1	TEST NUMBER: 1	DATE TESTED: 12/9/59
FORMATION TESTED: LANSING	INTERVAL TESTED: <span style="float:right">Foot</span> 4385-4431	ELEVATION: <span style="float:right">Foot</span> KB 3516

RECOVERY: 40 FT MUD WITH FEW OIL SPECKS
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HOLE, TOOL AND RECOVERY DATA

DRILL-PIPE CAPACITY (Barrels per foot) 0.01422	FEET OF MUD 40	MUD PERCENTAGE 0.0
DRILL-COLLAR CAPACITY (Barrels per foot)	FEET OF WATER	WATER PERCENTAGE 0.0
DRILL-COLLAR FOOTAGE (Feet)	FEET OF OTHER	OTHER PERCENTAGE 0.0
HOLE DIAMETER (Inches) 7.875	FEET OF OIL	OIL PERCENTAGE 0.0
PIPE FOOTAGE EQUIVALENT TO ANNULUS (Feet) 195	FEET OF CUSHION	FORMATION RECOVERY PERCENTAGE 0.0
INTERVAL THICKNESS (Feet) 46	TOTAL RECOVERY (Feet) 40	AVERAGE PRODUCTION RATE (Barrels per day) 13.65
MUD WEIGHT (Pounds per gallon) 9.9	CAPACITY OF ANNULUS (Barrels) 2.8	
EFFECTIVE FLOWING TIME (Minutes) 60	GROSS RECOVERY VOLUME (Barrels) 0.56	RECOVERY LESS THAN ANNULAR VOLUME, (X) <input checked="" type="checkbox"/>

RECORDER NUMBER ① 21-22	FILE NUMBER 0977020110	Gauge SUMMARY ② <input type="checkbox"/>	RECORDER NUMBER	FILE NUMBER
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1st GAUGE	2nd GAUGE	1st GAUGE	2nd GAUGE	1st GAUGE	2nd GAUGE
CALIBRATION SUMMARY					
INITIAL (t+θ)/θ CALCULATED FROM REPORTED DATA: <input type="checkbox"/>		FINAL (t+θ)/θ CALCULATED FROM REPORTED DATA: 4		GAUGE DEPTH: 4425	feet
INITIAL (t+θ)/θ CALCULATED FROM MEASURED DATA: <input type="checkbox"/>		FINAL (t+θ)/θ CALCULATED FROM MEASURED DATA: 3.69		GAUGE DATUM: - 909	feet
NON-LINEARITY INDEX: <span style="float:right">x 10<sup>-6</sup></span>				RMS DEVIATION, σ 21.7 psig	
KEY POINT SUMMARY				COEFFICIENT OF VARIATION, 100 σ / β 1.84 %	
INITIAL FLOWING PRESSURE: psig	NUMBER OF CALIBRATION POINTS: 4	FLOWING PRESSURE DIFFERENCE: psig		FLOWING PRESSURE COMPARISON: %	
FINAL FLOWING PRESSURE: psig		MUD PRESSURE DIFFERENCE: psig		INITIAL MUD PRESSURE COMPARISON: %	
INITIAL HYDROSTATIC MUD PRESSURE: 2360				FINAL MUD PRESSURE COMPARISON: %	
FINAL HYDROSTATIC MUD PRESSURE: 2350					

EXTRAPOLATION SUMMARY					
INITIAL SHUT-IN PRESSURE: <input type="checkbox"/>	INITIAL EXTRAPOLATION CONFIDENCE LIMIT: psig	SLOPE OF INITIAL BUILD-UP CURVE: <input type="checkbox"/>		psi/cycle	
NUMBER OF POINTS USED FOR INITIAL CURVE-FIT: <input type="checkbox"/>	INITIAL EXTRAPOLATION C.L. IN FEET OF WATER: feet	INITIAL EXTRAPOLATED PRESSURE: <input type="checkbox"/>		psig	
FINAL SHUT-IN PRESSURE: 1040	FINAL EXTRAPOLATION CONFIDENCE LIMIT: psig	SLOPE OF FINAL BUILD-UP CURVE: 601.3		psi/cycle	
NUMBER OF POINTS USED FOR FINAL CURVE-FIT: 5	FINAL EXTRAPOLATION C.L. IN FEET OF WATER: feet	FINAL EXTRAPOLATED PRESSURE: 1653.8		psig	

SUMMARY OF RESULTS					
PRODUCTIVITY INDEX: 0.01	Barrels per day per psi	DAMAGE RATIO: 0.5		INITIAL POTENTIOMETRIC SURFACE: <input type="checkbox"/>	
EFFECTIVE TRANSMISSIBILITY, kh <sub>d</sub> : 3.7	md ft per cp	INDICATED AVERAGE PERMEABILITY, k <sub>av</sub> : 0.1	md/cp	FINAL POTENTIOMETRIC SURFACE: 2944.4	

FILE		T	P	PSIG	
977020111	I X		0.5		0.3
	F XX	142.0	0.5		0.3
	FSI	156.0	72.0	11.14	885.8
	FSI	165.0	89.0	7.17	1096.3
	FSI	170.0	93.0	6.07	1145.9
	FSI	174.0	97.0	5.43	1195.4
	FSI	177.5	100.0	5.00	1232.6
	FSI	181.0	101.5	4.64	1251.1
	FSI	185.0	103.0	4.30	1269.7
	FSI	188.0	104.5	4.08	1288.3
	FSI	192.2	105.8	3.82	1304.4
	FSI	196.2	106.5	3.61	1313.1

FILE		T	P	PSIG	
977020112	I X		0.5		0.2
	F XX	143.0	0.5		0.2
	FSI	167.0	90.5	6.95	1116.4
	FSI	172.0	96.0	5.93	1184.6
	FSI	178.0	100.0	5.08	1234.2
	FSI	185.0	103.0	4.40	1271.4
	FSI	190.8	105.0	3.99	1296.2
	FSI	196.2	106.0	3.68	1308.6

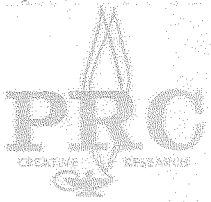
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CARD TYPE	DATA CONTENT						
10002							0396532810168220
10010	023	28306	2721050	910359MSSP			5200K59
101	KANS CHEYENNE				C NW NE	WF WF	
10201	FARMER J O & MUSGROVE			1 NEITZEL			
10202	PET CORP						
103	3513 DF				WILDCAT		
104					IDN 15-023-		28
105	SPUD 11/30/1959	COMP 12/22/1959	ROTARY				D&A-C
106			CONTR CWN				
107	DTD	5200				FM/TD 359MSSP	
110	CSC	8 5/8 @	366 W/	175			01
25001	LOG	451NEVA	3738	406WBNS	3974	406TRKO	4028
25002	LOG	406HWRD	4138	406TOPK	4168	406HBNR	4296
25003	LOG	406TRNT	4338	405KSSCL	4351	405DRUM	4500
25004	LOG	404MRMN	4650	404CHRK	4816	404CHRK	4908
25005	LOG	S404CHRK	4960	359MSSP	5088		
25101	LOG	B405KSSC	4633				
25201	SPL	A452CMRN	3010	406WBNS	3977	406HWRD	4131
25202	SPL	406TOPK	4160	406HBNR	4303	406TRNT	4331
25203	SPL	405KSSCL	4347	405DRUM	4495	404MRMN	4646
25204	SPL	404CHRK	4815	359MSSP	5099		
25301	SPL	B405KSSC	4634				
40101	DST 01		4385-	4431	405LGKC		S002
40120	REC	40FT	MUD				
40131	FINAL OP 1H						
40132			FSIP 1040		20M		
40190	WITH FEW SPECKS OIL						
40201	DST 02		4484-	4524	405LGKC		003
40202	OVERLAPS 405DRUM						
40220	REC	10FT	MUD				
40231	FINAL OP	OH30M	IFP	0	FFP	0	
40232			FSIP 280		20M		
40301	DST 03		4520-	4571	405DRUM		004
40320	REC	25FT	MUD				
40331	FINAL OP	OH30M	IFP	0	FFP	0	
40332			FSIP 440		20M		
40401	DST 04	STRD	4060-	4098	406TRKO		S005
40420	REC	1575FT	WMUD				
40431	FINAL OP	OH30M	IFP	195	FFP	855	
40432			FSIP 1140		20M		
40490	BRACKISH TASTE FEW SPECKS BLACK OIL						

5099  
3513  
-1586



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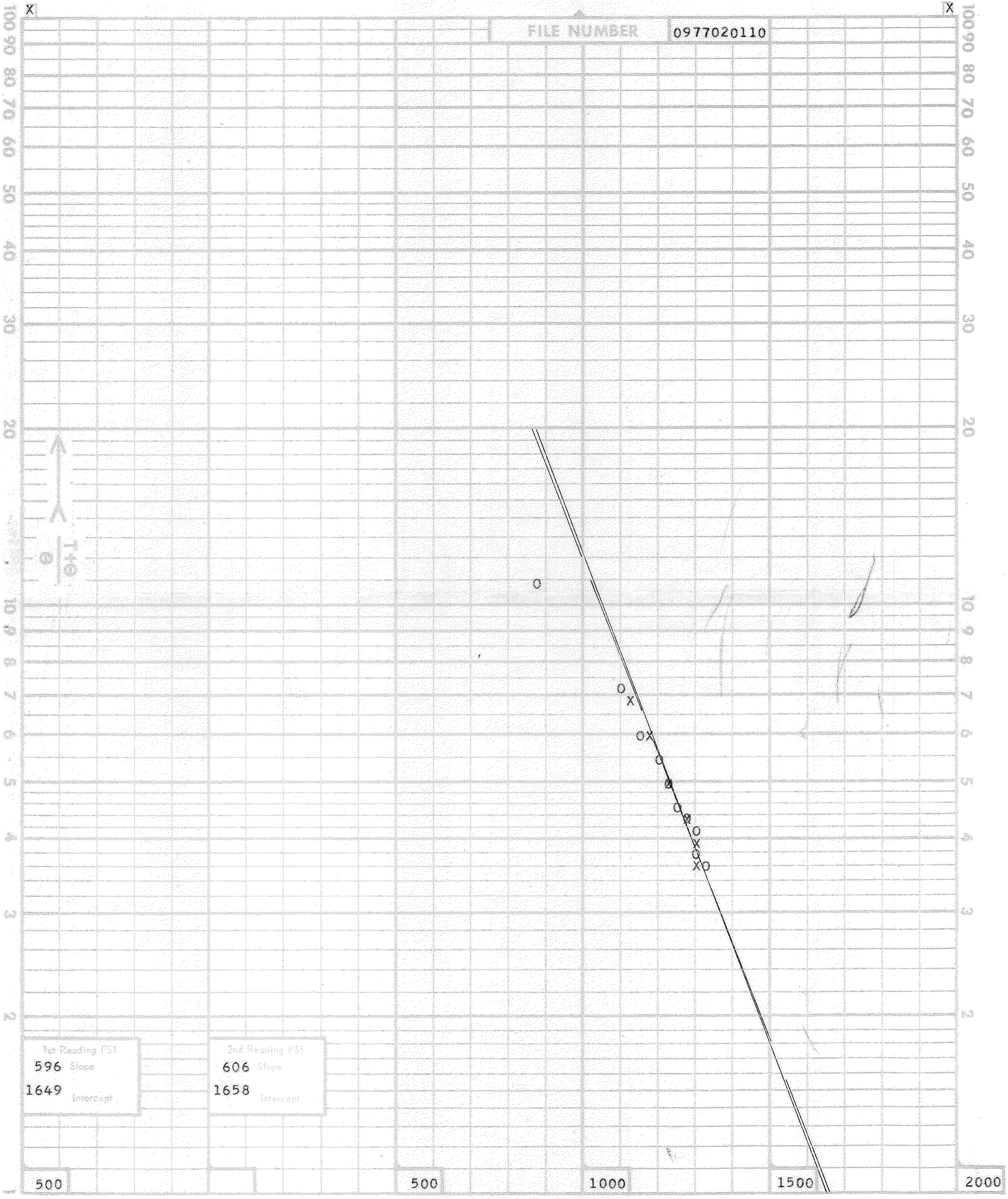
P. O. Box 8377

Denver, Colorado

DRILL-STEM-TEST PRESSURE ANALYSIS

PRESSURE VS. LOG (TOTAL TIME / SHUT-IN TIME)

FILE NUMBER 0977020110



PRESSURE, PSIG →

- = FIRST READING
- × = SECOND READING
- \* = SERVICE COMPANY DATA



**PETROLEUM RESEARCH CORPORATION**  
**P.O. Box 8377**  
**Denver, Colorado**

**Drill-Stem-Test Pressure Analysis Report**

LOCATION: <b>T5S-R39W 3 C NW NE</b>	TIME OPEN: <b>60 MINUTES</b>	FILE NUMBER: <b>0977-02-04</b>
COUNTY AND STATE: <b>KANSAS, CHEYENNE</b>	INITIAL SHUT-IN TIME: <input type="checkbox"/>	I. D. NUMBER: <b>H 186908</b>
COMPANY: <b>FARMER AND MUSGROVE</b>	FINAL SHUT-IN TIME: <b>20 MINUTES</b>	DATE COMPUTED: <b>1/18/60</b>
LEASE AND WELL NUMBER: <b>NEITZEL 1</b>	TEST NUMBER: <b>1</b>	DATE TESTED: <b>12/16/59</b>
FORMATION TESTED: <input type="checkbox"/>	INTERVAL TESTED: Feet <b>4060-4098</b>	ELEVATION: Feet <b>KB 3516</b>

RECOVERY: <b>1575 FT MUDDY SALT WATER</b>
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**HOLE, TOOL AND RECOVERY DATA**

DRILL-PIPE CAPACITY (Barrels per foot) <b>0.01422</b>	FEET OF MUD	MUD PERCENTAGE % <b>0.0</b>
DRILL-COLLAR CAPACITY (Barrels per foot)	FEET OF WATER <b>1575</b>	WATER PERCENTAGE % <b>100</b>
DRILL-COLLAR FOOTAGE (Feet)	FEET OF OTHER	OTHER PERCENTAGE % <b>0.0</b>
HOLE DIAMETER (Inches) <b>7.875</b>	FEET OF OIL	OIL PERCENTAGE % <b>0.0</b>
PIPE FOOTAGE EQUIVALENT TO ANNULUS (Feet) <b>161</b>	FEET OF CUSHION	FORMATION RECOVERY PERCENTAGE % <b>89.77</b>
INTERVAL THICKNESS (Feet) <b>38</b>	TOTAL RECOVERY (Feet) <b>1575</b>	AVERAGE PRODUCTION RATE (Barrels per day) <b>537.51</b>
MUD WEIGHT (Pounds per gallon) <b>9.8</b>	CAPACITY OF ANNULUS (Barrels) <b>2.3</b>	
EFFECTIVE FLOWING TIME (Minutes) <b>60</b>	GROSS RECOVERY VOLUME (Barrels) <b>22.39</b>	RECOVERY LESS THAN ANNULAR VOLUME, (X) <input type="checkbox"/>

RECORDER NUMBER <b>BT-373</b>	FILE NUMBER <b>0977020410</b>	<b>GAUGE SUMMARY</b>		RECORDER NUMBER <input type="checkbox"/>	FILE NUMBER
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1st GAUGE	2nd GAUGE	1st GAUGE	2nd GAUGE	1st GAUGE	2nd GAUGE
<b>KEY POINT SUMMARY</b>					
INITIAL FLOWING PRESSURE: psig <b>211</b>		NUMBER OF CALIBRATION POINTS: <b>8</b>		GAUGE DEPTH: feet <b>4064</b>	
FINAL FLOWING PRESSURE: psig <b>867</b>		FLOWING PRESSURE DIFFERENCE: psig <b>656</b>		GAUGE DATUM: feet <b>- 548</b>	
INITIAL HYDROSTATIC MUD PRESSURE: psig <b>2091</b>		MUD PRESSURE DIFFERENCE: psig <b>76</b>		RMS DEVIATION, $\sigma$ psig <b>7.6</b>	
FINAL HYDROSTATIC MUD PRESSURE: psig <b>2015</b>				COEFFICIENT OF VARIATION, $100 \sigma / \bar{p}$ % <b>0.5</b>	
				FLOWING PRESSURE COMPARISON: % <b>128.3</b>	
				INITIAL MUD PRESSURE COMPARISON: % <b>99</b>	
				FINAL MUD PRESSURE COMPARISON: % <b>102.8</b>	

<b>EXTRAPOLATION SUMMARY</b>					
INITIAL SHUT-IN PRESSURE: psig <input type="checkbox"/>	INITIAL EXTRAPOLATION CONFIDENCE LIMIT: psig <input type="checkbox"/>	SLOPE OF INITIAL BUILD-UP CURVE: psi/cycle <input type="checkbox"/>			
NUMBER OF POINTS USED FOR INITIAL CURVE-FIT: <input type="checkbox"/>	INITIAL EXTRAPOLATION C.L. IN FEET OF WATER: feet <input type="checkbox"/>	INITIAL EXTRAPOLATED PRESSURE: psig <input type="checkbox"/>			
FINAL SHUT-IN PRESSURE: psig <b>1168</b>	FINAL EXTRAPOLATION CONFIDENCE LIMIT: psig <b>8.3</b>	SLOPE OF FINAL BUILD-UP CURVE: psi/cycle <b>68.7</b>			
NUMBER OF POINTS USED FOR FINAL CURVE-FIT: <b>5</b>	FINAL EXTRAPOLATION C.L. IN FEET OF WATER: feet <b>19.3</b>	FINAL EXTRAPOLATED PRESSURE: psig <b>1197.4</b>			

<b>SUMMARY OF RESULTS</b>					
PRODUCTIVITY INDEX: Barrels per day per psi <b>1.63</b>	DAMAGE RATIO: <b>0.88</b>	INITIAL POTENTIOMETRIC SURFACE: feet <input type="checkbox"/>			
EFFECTIVE TRANSMISSIBILITY, $kh/\mu$ : md ft per cp <b>1272.5</b>	INDICATED AVERAGE PERMEABILITY, $k/\mu$ : md/cp <b>33.5</b>	FINAL POTENTIOMETRIC SURFACE: feet <b>2241.9</b>			

ABSENT OR DOES NOT APPLY.

PRC - 112958 - DST Explanation of terms and limits of liability are explained in DST TECHNICAL MANUAL.

FILE	T	P	PSIG
977020411	62.8	36.0	307.2
I	63.0	102.0	874.7
F	65.2	126.0	315.00
XX	67.8	128.8	27.16
X	67.8	130.5	13.56
	70.0	132.0	9.72
	73.0	133.0	7.15
	76.8	134.0	5.48
	79.8	134.2	4.69
	82.5	134.8	4.18

FILE	T	P	PSIG
977020412	60.2	36.0	310.5
I	63.7	101.2	873.8
F	67.7	128.0	18.20
XX	67.7	131.0	9.02
X	71.7	132.0	6.23
	75.7	133.0	4.88
	80.0	133.5	4.04

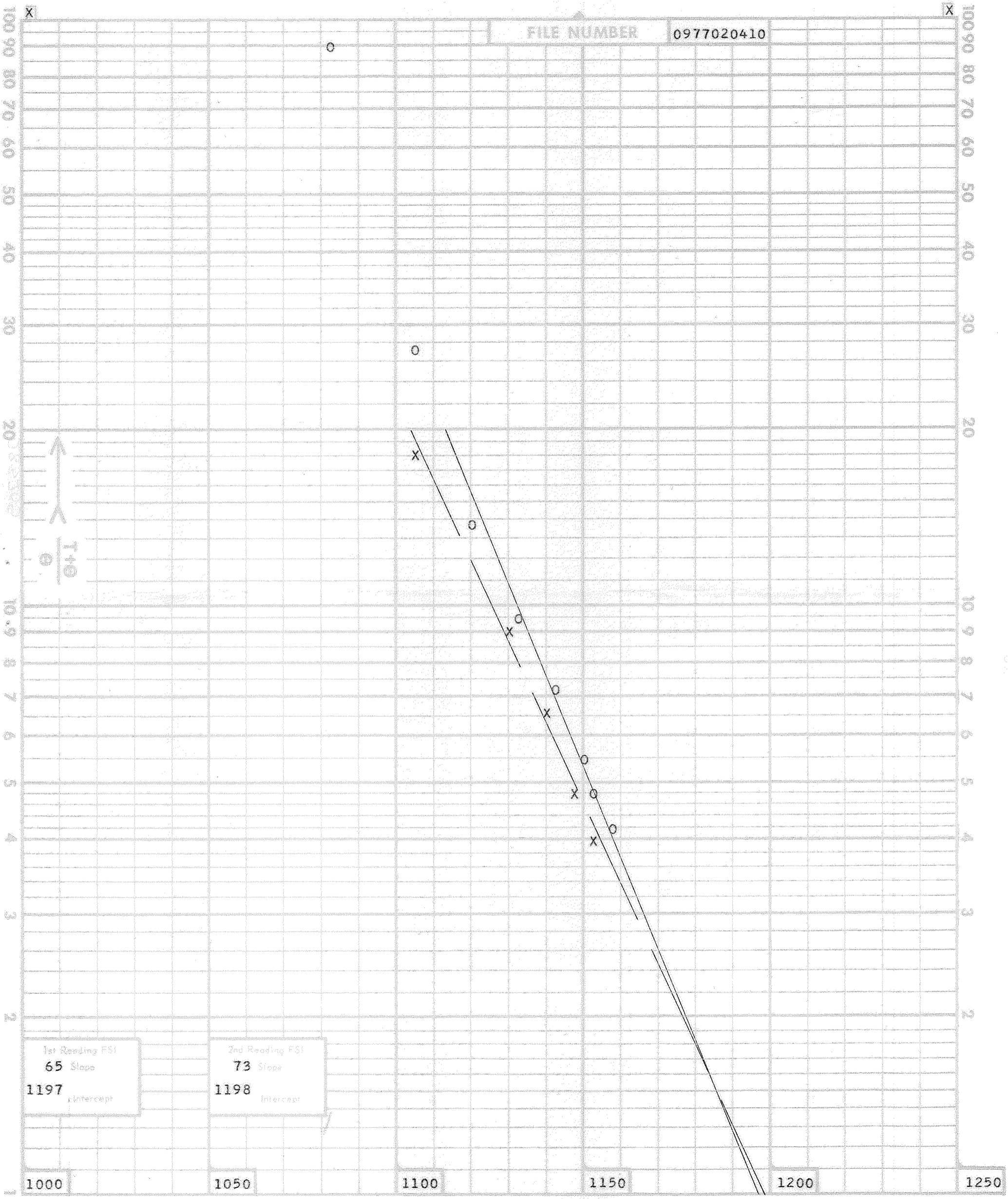
3-5-39W  
Neitzel 1

PETROLEUM RESEARCH CORPORATION  
P. O. Box 8377  
Denver, Colorado



DRILL-STEM-TEST PRESSURE ANALYSIS

PRESSURE VS. LOG (TOTAL TIME / SHUT-IN TIME)



PRESSURE, PSIG →

- o - FIRST READING
- x - SECOND READING
- \* - SERVICE COMPANY DATA